

are used in manufacture, inspection, testing, and repair.

(4) Procedures to ensure that the fabrication and construction materials received are properly identified and documented.

(5) A description of the manufacturing, repair, inspection, testing, and qualification or maintenance program, including the acceptance criteria, so that an inspector can identify the characteristics of the tank car and the elements to inspect, examine, and test at each point.

(6) Monitoring and control of processes and product characteristics during production.

(7) Procedures for correction of nonconformities.

(8) Provisions indicating that the requirements of the AAR Specifications for Tank Cars (IBR, see §171.7 of this subchapter), apply.

(9) Qualification requirements of personnel performing non-destructive inspections and tests.

(10) Procedures for evaluating the inspection and test technique employed, including the accessibility of the area and the sensitivity and reliability of the inspection and test technique and minimum detectable crack length.

(11) Procedures for the periodic calibration and measurement of inspection and test equipment.

(12) A system for the maintenance of records, inspections, tests, and the interpretation of inspection and test results.

(c) Each tank car facility shall ensure that only personnel qualified for each non-destructive inspection and test perform that particular operation.

(d) Each tank car facility shall provide written procedures to its employees to ensure that the work on the tank car conforms to the specification, AAR approval, and owner's acceptance criteria.

(e) Each tank car facility shall train its employees in accordance with subpart H of part 172 of this subchapter on the program and procedures specified in paragraph (b) of this section to ensure quality.

(f) No tank car facility may manufacture, repair, inspect, test, qualify or maintain tank cars subject to requirements of this subchapter, unless it is

operating in conformance with a quality assurance program and written procedures required by paragraphs (a) and (b) of this section.

[Amdt. 179-50, 60 FR 49076, Sept. 21, 1995, as amended by Amdt. 179-50, 61 FR 33255, June 26, 1996; 68 FR 48571, Aug. 14, 2003; 68 FR 75759, Dec. 31, 2003]

Subpart B—General Design Requirements

§ 179.10 Tank mounting.

(a) The manner in which tanks are attached to the car structure shall be approved. The use of rivets to secure anchors to tanks prohibited.

(b) [Reserved]

§ 179.11 Welding certification.

(a) Welding procedures, welders and fabricators shall be approved.

(b) [Reserved]

§ 179.12 Interior heater systems.

(a) Interior heater systems shall be of approved design and materials. If a tank is divided into compartments, a separate system shall be provided for each compartment.

(b) Each interior heater system shall be hydrostatically tested at not less than 13.79 bar (200 psig) and shall hold the pressure for 10 minutes without leakage or evidence of distress.

[Amdt. 179-52, 61 FR 28678, June 5, 1996, as amended by 66 FR 45390, Aug. 28, 2001]

§ 179.13 Tank car capacity and gross weight limitation.

Tank cars built after November 30, 1970, must not exceed 34,500 gallons capacity or 263,000 pounds gross weight on rail. Existing tank cars may not be converted to exceed 34,500 gallons capacity or 263,000 pounds gross weight on rail.

[Amdt. 179-4, 35 FR 14217, Sept. 9, 1970]

§ 179.14 Coupler vertical restraint system.

(a) *Performance standard.* Each tank car shall be equipped with couplers capable of sustaining, without disengagement or material failure, vertical loads of at least 200,000 pounds (90,718.5 kg) applied in upward and downward directions in combination with buff loads of

§ 179.15

2,000 pounds (907.2 kg), when coupled to cars which may or may not be equipped with couplers having this vertical restraint capability.

(b) *Test verification.* Except as provided in paragraph (d) of this section, compliance with the requirements of paragraph (a) of this section shall be achieved by verification testing of the coupler vertical restraint system in accordance with paragraph (c) of this section.

(c) *Coupler vertical restraint tests.* A coupler vertical restraint system shall be tested under the following conditions:

(1) The test coupler shall be tested with a mating coupler (or simulated coupler) having only frictional vertical force resistance at the mating interface; or a mating coupler (or simulated coupler) having the capabilities described in paragraph (a) of this section;

(2) The testing apparatus shall simulate the vertical coupler performance at the mating interface and may not interfere with coupler failure or otherwise inhibit failure due to force applications and reactions; and

(3) The test shall be conducted as follows:

(i) A minimum of 200,000 pounds (90,718.5 kg) vertical downward load shall be applied continuously for at least 5 minutes to the test coupler head simultaneously with the application of a nominal 2,000 pounds (907.2 kg) buff load;

(ii) The procedures prescribed in paragraph (c)(3)(i) of this section, shall be repeated with a minimum vertical upward load of 200,000 pounds (90,718.5 kg); and

(iii) A minimum of three consecutive successful tests shall be performed for each load combination prescribed in paragraphs (c)(3)(i) and (ii) of this section. A test is successful when a vertical disengagement or material failure does not occur during the application of any of the loads prescribed in this paragraph.

(d) *Authorized couplers.* As an alternative to the test verifications in paragraph (c) of this section, the following couplers are authorized:

(1) E double shelf couplers designated by the Association of American Railroads' Catalog Nos., SE60CHT, SE60CC,

49 CFR Ch. I (10–1–07 Edition)

SE60CHTE, SE60CE, SE60DC, SE60DE, SE67CC, SE67CE, SE67BHT, SE67BC, SE67BHTE, SE67BE, SE68BHT, SE68BC, SE68BHTE, SE68BE, SE69AHTE, and SE69AE.

(2) F double shelf couplers designated by the Association of American Railroads' Catalog Nos., SF70CHT, SF70CC, SF70CHTE, SF70CE, SF73AC, SF73AE, SF73AHT, SF73AHTE, SF79CHT, SF79CC, SF79CHTE, and SF79CE.

[Amdt. 179–42, 54 FR 38797, Sept. 20, 1989]

§ 179.15 Pressure relief devices.

Except for DOT Class 106, 107, 110, and 113 tank cars, tanks must have a pressure relief device, made of material compatible with the lading, that conforms to the following requirements:

(a) *Performance standard.* Each tank must have a pressure relief device, made of materials compatible with the lading, having sufficient flow capacity to prevent pressure build-up in the tank to no more than the flow rating pressure of the pressure relief device in fire conditions as defined in appendix A of the AAR Specifications for Tank Cars (IBR, see §171.7 of this subchapter).

(b) *Settings for reclosing pressure relief devices.* (1) Except as provided in paragraph (b)(2) of this section, a reclosing pressure relief valve must have a minimum start-to-discharge pressure equal to the sum of the static head and gas padding pressure and the lading vapor pressure at the following reference temperatures:

(i) 46 °C (115 °F) for noninsulated tanks;

(ii) 43 °C (110 °F) for tanks having a thermal protection system incorporating a metal jacket that provides an overall thermal conductance at 15.5 °C (60 °F) of no more than 10.22 kilojoules per hour per square meter per degree Celsius (0.5 Btu per hour per square foot per degree F) temperature differential; and

(iii) 41 °C (105 °F) for insulated tanks.

(2)(i) The start-to-discharge pressure of a pressure relief device may not be lower than 5.17 Bar (75 psig) or exceed 33 percent of the minimum tank burst pressure.

(ii) Tanks built prior to October 1, 1997 having a minimum tank burst pressure of 34.47 Bar (500 psig) or less